Signal Booster Installation Guide

SIGNALBOOST™
Dual-Band Mobile
Signal Booster

(811510 is single band)

Contents:

How it Works 1
Before Getting Started 2
Installation Overview 2
In-Vehicle Installation 3
  Outside Antenna 3
  Signal Booster 4
  Cellular Cradle Plus 5
  Ultra Slim Antenna 6
Powering Up the Signal Booster 7
In-Building Installation 8
Warnings and Recommendations 9
Guarantee and Warranty 10
Signal Booster Specifications . . . . . Back Cover

Appearance of device and accessories may vary.

Note: *This manual contains important safety and operating information. Please read and follow the instructions in this manual. Failure to do so could be hazardous and result in damage to your Signal Booster.*

Wilson® Electronics, Inc.

Installation Instructions for the Following Wilson Electronics Signal Booster:

SIGNALBOOST™ Dual-Band Mobile Signal Booster

Model #811210
FCC ID: PWO819DA IC: 4726A-819DA

The term "IC" before the radio certification number only signifies that Industry Canada technical specifications were met.

Not For Sale in U.S. / Canada: 811510, 811514, 811710, 811714, 811910, 811914

Inside this Package

DUAL-BAND Signal Booster

12 V DC power supply (vehicle)

(Products may change due to upgrades)

Items below may be included with some kits

(Products may change due to upgrades)

Cellular Cradle Plus

Ultra Slim Antenna

Adhesive/Screw Swivel Bracket

Adhesive Bracket

Cradle Arms

12" Magnet-Mount Antenna

4" Mini Magnet-Mount Antenna

Optional Items and Accessories

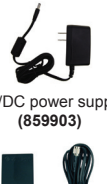
Cellular Cradle Plus **(301246)**

Mini Magnet-Mount Antenna **(301113)**

12-inch Magnet-Mount Antenna **(301103)**

Soft Carrying Case **(859924)**

Window Bracket **(901128)**



AC/DC power supply **(859903)**

Ultra Slim Antenna **(301143)**

Available at www.WilsonElectronics.com

Appearance of device and accessories may vary.

How it Works

The Signal Booster, in conjunction with the use of an Outside Antenna, will collect the signal from the cell tower and send it through the cable to the Signal Booster. The state-of-the-art technology that powers this Signal Booster is designed to increase your signal more than 20 times, and reduce disconnects and dropped calls. The boosted signal is then sent to the Cellular Cradle Plus or Ultra Slim Antenna (depending on which one you have). Your cellular device receives the improved signal. When the cellular device transmits, the signal goes through the Cellular Cradle Plus or Ultra Slim Antenna, boosted by the Signal Booster and broadcasted back to the cell tower through the Outside Antenna.

If your kit contains the Cellular Cradle Plus, it provides a convenient place to stow your cell phone and allows the driver to keep both hands on the wheel while using the phone, greatly increasing safety. This kit may include different mounting options for installing the cradle on the dash or console of your vehicle.

If your kit does not contain a Cellular Cradle Plus, it is available for purchase at www.WilsonElectronics.com

Before Getting Started

This guide will help you properly install your Wilson Electronics SIGNALBOOST™ Dual-Band Signal Booster. **It is important to read through all of the installation steps for your particular application prior to installing any equipment.** Read through the instructions, visualize where all the equipment will need to be installed and do a soft installation before mounting any equipment. Please contact Wilson Electronics Technical Support with any questions at 866-294-1660. You may also send an email to tech@wilsonelectronics.com

Installation Overview

The following steps provide a summary of the Signal Booster/antenna installation process using the Mini Magnet-Mount or Magnet Mount Antenna. However, they are not a substitute for the complete installation instructions on the following pages, which you should read thoroughly. If you are using a different Outside Antenna, follow the specific instructions that come with it.

STEP 1: Install the Outside Antenna

For a In-Vehicle installation, attach the Outside Antenna in the center of the vehicle's roof and run the cable through the door to the Signal Booster. For In-Building installation, affix the optional window bracket to a window with the suction cups, attach the Outside Antenna to the bracket and run the cable to the Signal Booster. (See page 3 for In-Vehicle, and page 8 for In-Building.)

STEP 2: Install the Signal Booster

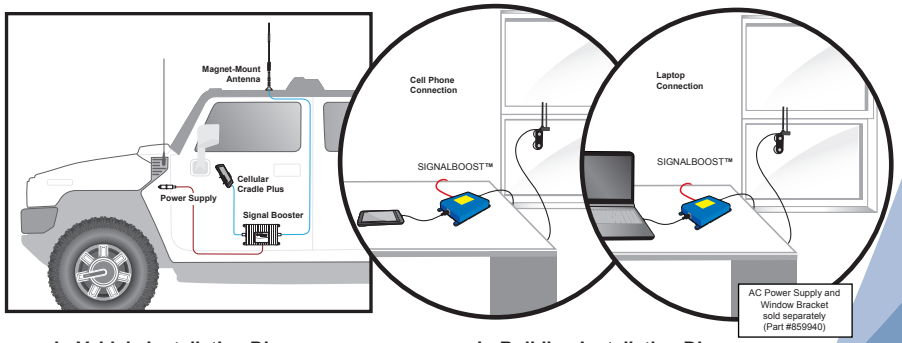
Position the Signal Booster in a well-ventilated location away from direct sunlight. Run the cable from the Outside Antenna and attach it to the connector labeled "Outside Antenna" on the Signal Booster. (See page 4)

STEP 3: Attach the Cellular Cradle Plus or Ultra Slim Antenna

Attach the Cellular Cradle Plus or Ultra Slim cable to the connector labeled "Inside Antenna" on the Signal Booster. If using the Ultra Slim Antenna, attach the antenna to your cell phone or cellular data card with the VELCRO® provided. (See page 6)

STEP 4: Power up the Signal Booster

IMPORTANT! Before connecting the power supply, ensure that both the Outside Antenna cable and the Cradle Plus or Ultra Slim cable are connected. (See page 7)

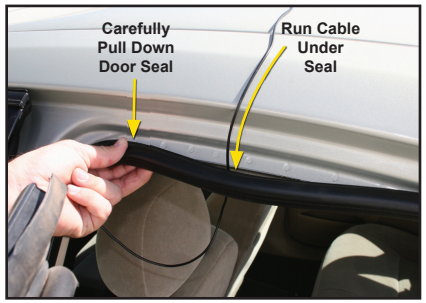


In-Vehicle Installation Diagram **In-Building Installation Diagram**

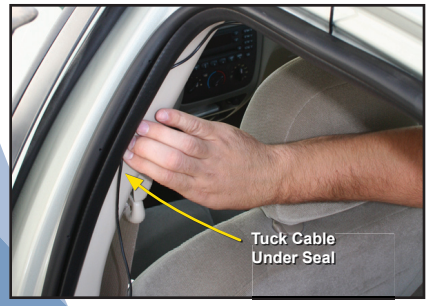
Installing the Outside Antenna

To receive the best cell signal, select a location in the center of the vehicle's roof that is 12 inches away from any other antennas and free of obstructions. The antenna must be installed vertically. Signal performance will be degraded if the antenna is not vertical.

Warning: The antenna used with this Signal Booster must have a separation distance of at least 12 inches from all persons.



The antenna cable may run through the door to the Signal Booster. For a more professional looking installation, run the antenna cable under the door seal. Carefully pull down the door seal. Run the cable through the seal and push the seal back into place. This prevents constant wear and tear on the cable as the door opens and closes.



The antenna cable is small enough to easily tuck under the door seal or plastic molding.

In-Vehicle

Installing the Wilson Electronics Signal Booster

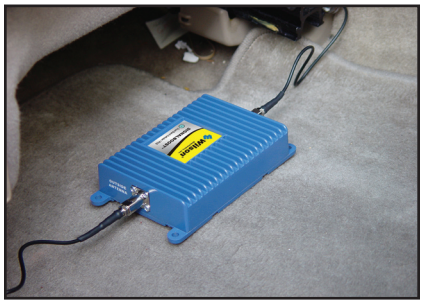
Select a location to install the Signal Booster that is away from excessive heat, direct sunlight or moisture and that has proper ventilation.

Recommended installation locations for the Signal Booster are:

- Under the seat
- Under the dash

Run the cable from the Outside Antenna and attach it to the connector labeled "Outside Antenna" on the Signal Booster.

Warning: Do not plug in the DC power supply until the Outside Antenna and Cellular Cradle Plus or Ultra Slim Antenna cables are attached to the Signal Booster.



Attach the cable from the Cellular Cradle Plus or the Ultra Slim Antenna to the connector on the Signal Booster.

Warning: Do not plug the Signal Booster directly into the cell phone or cellular data card using an antenna adapter. It could damage the Signal Booster, cell phone and/or cellular data card.

Adjusting the Cradle Plus Arms

Included with your Cradle Plus are various sized arms, which will provide you with multiple options to customize the Cradle to fit your phone.

1. Change arms

Gently grab the arm and lift upward until the arm slides free from the Cradle.

2. Reposition arms

Position the arm above a different slot on the Cradle. Gently slide the arm down until the arm is firmly in place.

Contact Wilson Electronics Technical Support Team with any questions at 866-294-1660
Or email: tech@wilsonelectronics.com Hours: 7am to 6pm MST.

Installing the Cellular Cradle Plus
(Included in some kits)

For best mounting results and long-term performance, we suggest that you choose a flat smooth surface like the console area of your vehicle between the two front seats. If this is not available in your vehicle, you may mount the cradle on the front of the dashboard.

If mounting the cradle on a sloped area of the dashboard in your vehicle, please note that gravity may affect the adhesive over time. Use the screw mount for a more permanent attachment.

Option 1 - Adhesive Bracket

Clean the area where the bracket will be mounted with the alcohol wipe (included in some kits) and a soft cloth. Allow to dry.

Peel the backing to expose the adhesive and press the bracket onto the desired location in the vehicle. ***Note:*** *Be sure the bracket is positioned vertically.*

Allow the adhesive to cure for 24 hours before you attach the cradle.

Note: *Once the cradle is attached, you can adjust the angle of the adhesive bracket by applying gentle pressure to the top or bottom of the cradle.*

Option 2 - Adhesive/Screw Swivel Bracket

Clean the area where the bracket is to be mounted with the alcohol wipe (included in some kits) and a soft cloth. Allow to dry.

For an adhesive mount, peel the backing to expose the adhesive and press the bracket onto the desired location in the vehicle. ***Allow the adhesive to cure for 24 hours before you attach the cradle.***

For a screw mount, use an ice pick or awl to punch through the adhesive and expose the four screw holes in the bracket. ***Note:*** *Screws are not included in this kit.*

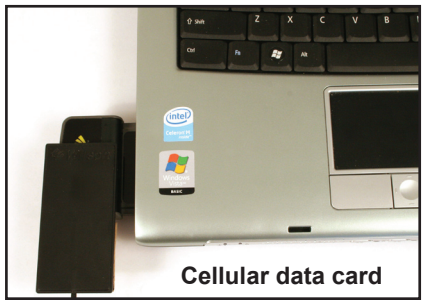
Using the bracket as a template, mark the locations for the screws as shown, drill pilot holes and attach the bracket with screws (not included).

Once the cradle is attached, you can loosen the knurled wheel and swivel the hook to the desired angle, then re-tighten the wheel.

Attaching the Cradle

Once you have installed the mount in the desired location, attach the cradle by aligning the rectangular hole on its back with the hook on the mount. Grasping the sides of the cradle, slide it downward approximately ¼ inch into place.

Installing the Ultra Slim Antenna
(Included in some kits)



The Ultra Slim must be placed directly on the cell phone or cellular data card to work properly. Attach the Ultra Slim to the cell phone or cellular data card with the VELCRO® provided.

The Ultra Slim cable is long enough to reach the Signal Booster location. This allows for ease and convenience of use.

To adjust the Ultra Slim for the best signal, go to a weak signal location where your cell phone registers only 1-2 bars without the Ultra Slim connected. (Be sure the Signal Booster is turned off when checking for low signal). Then, attach the Ultra Slim to the phone, power up the Signal Booster and you should see a signal improvement of 2 or more bars.

Note: *Many phones take up to 30 seconds to reset the bar indicator.*

To maximize performance, attach the Ultra Slim as close as possible to the original antenna on your cell phone or cellular data card.

For cell phones with an internal antenna, place the Ultra Slim on the back of the phone near the top. (Figure 1)

Note: *Certain phones, such as the Motorola RAZR, have internal antennas at the base, rather than the top, in which case the Ultra Slim should be attached at the bottom rear of the phone.*

For cell phones with an external antenna, place the Ultra Slim directly below the phone's original antenna. (Figure 2)

If you have any questions as to the location of the antenna on your phone, call Wilson Electronics Technical Support at: 866-294-1660.

Figure 1

Figure 2

Powering Up the Signal Booster

Carefully insert the power cable

Make sure both the Outside Antenna and Cellular Cradle Plus or Ultra Slim Antenna cables are connected before powering up the Signal Booster.

Connect the power cable from the power supply to the Signal Booster input marked “12 V DC” and insert the large end into the power socket or the vehicle power outlet.

(Power supply may change due to upgrades)

Warning: Use only Wilson Electronics power supply units. Use of a non-Wilson Electronics product may damage your equipment.

The Signal Booster may remain on all the time. However, leaving the Signal Booster on in a vehicle when it is not running can discharge the battery in a day or two.

A good option is to power the Signal Booster through the ignition switch so the Signal Booster is turned on and off with the vehicle.

IMPORTANT: Do not power up the Signal Booster unless both antenna cables are attached to the Signal Booster.

AC/DC power supply (sold separately) (859903)

Note: *The aluminum casing of the Signal Booster will adjust very quickly to the ambient temperature of its environment. For example, in the summer, when the inside of a car can reach 140° Fahrenheit, the Signal Booster temperature may be 150° or higher. The casing will be hot to the touch, similar to a metal door handle or steering wheel. Such high temperatures will not damage the Signal Booster, nor do they pose a fire risk. As recommended in these instructions, when installing the Signal Booster in a vehicle, select a location with adequate ventilation, such as under the seat or dashboard. Keep the area free of items that could block air flow to the Signal Booster.*

Installing the Outside Antenna

To receive the best cell signal, select a window location at least 12 inches away from any radio or television antennas and free of obstructions.

Using the suction cups, position the mounting bracket on the window at a height convenient to where the Signal Booster will be located, then attach the antenna to the bracket.
The antenna must be installed vertically. Signal performance will be degraded if the antenna is not vertical.

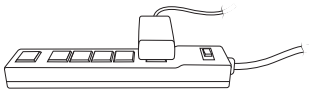
Warning: The antenna used with this Signal Booster must have a separation distance of at least 12 inches from all persons.

Installing the Wilson Electronics Signal Booster

Select a location to install the Signal Booster that is away from excessive heat, direct sunlight or moisture and that has proper ventilation.

Recommended installation locations are:
- On a desk or table top
- In a bookshelf
- On the floor

Warning: Do not plug in the AC power supply until both antenna cables are attached to the Signal Booster.



Wilson® Electronics recommends that all AC power supplies for home electronics be plugged into a **Surge Protector Power Strip.**

Run the cable from the Outside Antenna and attach it to the connector labeled “Outside Antenna” on the Signal Booster.

Attach the Cellular Cradle Plus or Ultra Slim cable to the connector labeled “Inside Antenna” on the Signal Booster.

Then attach the Cellular Cradle Plus or Ultra Slim to your cell phone or data card. (See page 5 & 6.)

Warnings and Recommendations

⚠ Warning: The antenna must be installed with a separation distance of at least 12 inches from any vehicle occupant and must not be located or operating in conjunction with any other antenna or Signal Booster. Use of this Signal Booster with an antenna providing gain higher than 6.12 dBi is in violation of FCC regulations for which the offender is fully liable. All Wilson Electronics mobile antennas provide 6.12 dBi gain or less.

⚠ Warning: Do not connect the power supply to the Signal Booster until the Outside Antenna and Cellular Cradle Plus (or Ultra Slim Antenna) cables are attached to the Signal Booster.

⚠ Warning: Do not plug the Signal Booster directly into the cell phone or cellular data card using an antenna adapter. It could damage the Signal Booster, cell phone and/or cellular data card.

About Wilson Electronics

Wilson Electronics, Inc. has been a leader in the wireless communications industry for over 40 years. The company designs and manufactures Signal Boosters, antennas and related components that significantly improve cellular signal reception and transmission in a wide variety of applications, both mobile (marine, RV, vehicles) and in-building (home, office, M2M).

With extensive experience in antenna and Signal Booster research and design, the company's engineering team uses a state-of-the-art testing laboratory, including an anechoic chamber and network analyzers, to fine-tune antenna designs and performance. For its Signal Boosters, Wilson Electronics uses a double electrically insulated RF enclosure and cell tower simulators for compliance testing.

All products are engineered and assembled in the company's 55,000-square-foot headquarters in St. George, Utah. Wilson Electronics has product dealers in all 50 states as well as in countries around the world.

30-Day Money-Back Guarantee

All Wilson Electronics products are protected by Wilson Electronics 30-day money-back guarantee. If for any reason the performance of any product is not acceptable, simply return the product directly to the reseller with a dated proof of purchase.

1-Year Warranty

Wilson Electronics Signal Boosters are warranted for one (1) year against defects in workmanship and/or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated proof of purchase.

Signal Boosters may also be returned directly to the manufacturer at the consumer's expense, with a dated proof of purchase and a Returned Material Authorization (RMA) number supplied by Wilson Electronics. Wilson Electronics shall, at its option, either repair or replace the product. Wilson Electronics will pay for delivery of the repaired or replaced product back to the original consumer if located in the USA.

This warranty does not apply to any Signal Boosters determined by Wilson Electronics to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages physical or electronic properties.

RMA numbers may be obtained by phoning Technical Support at 866-294-1660.

This device complies with Part 15 of FCC rules. The transaction is subject to two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by Wilson Electronics could void the authority to operate this equipment.

Disclaimer: The information provided by Wilson Electronics, Inc. is believed to be complete and accurate. However, no responsibility is assumed by Wilson Electronics, Inc. for any business or personal losses arising from its use, or for any infringements of patents or other rights of third parties that may result from its use.

Copyright © 2011 Wilson Electronics, Inc. All rights reserved.

One or more of the following U.S. Patent numbers may apply to the Signal Booster in this product – D596,614; D596,615; D563,381;7,729,669; 7,486,929; 7,729,656; 7,409,186; 7,783,318; 7,684,838; 12,714,994.

Wilson® Electronics, Inc.

3301 East Deseret Drive, St. George, UT 84790
For additional Technical Support visit www.WilsonElectronics.com
or email at: tech@wilsonelectronics.com
Phone: 866-294-1660 Local: 435-673-5021 Fax: 435-656-2432
www.twitter.com/WilsonCellular www.facebook.com/WilsonCellular

Signal Booster Specifications

	Dual-Band Specifications	
Model Number	811210	
Connectors	FME-Male	
Impedance (input/output)	50 Ohms	
Dimensions	5 x 3.5 x 1.2 inch or 12.7 x 8.9 x 3 cm	
Weight	1.03 lbs or 0.468 kg	
Frequency	824-894 MHz / 1850-1990 MHz	
[1]Passband Gain (nominal)		
800 MHz (uplink/downlink)	25 dB / 25 dB	
1900 MHz (uplink/downlink)	25 dB / 25 dB	
[2]20 dB Bandwidth (nominal)		
800 MHz (uplink/downlink)	53 MHz / 62 MHz	
1900 MHz (uplink/downlink)	112 MHz / 110 MHz	

[3]Power output for single cell phone (uplink)	800 MHz	1900 MHz
CDMA	+33.0 dBm	+29.3 dBm
GSM	+34.3 dBm	+30.3 dBm
EDGE	+34.1 dBm	+30.2 dBm
AMPS	+30.1 dBm	

Power output for single received channel (downlink)	800 MHz	1900 MHz
CDMA	+5.1 dBm	+6.8 dBm
GSM	+3.2 dBm	+4.4 dBm
EDGE	+3.2 dBm	+4.6 dBm
AMPS	+3.2 dBm	

[4]Power output for multiple received channels (downlink). The maximum power is reduced by the number of channels:	Number of channels	Maximum Power	
		800 MHz	1900 MHz
	2	+1.0 dBm	+1.7 dBm
	3	-2.5 dBm	-1.8 dBm
	4	-5.0 dBm	-4.3 dBm
	5	-7.0 dBm	-6.3 dBm
	6	-8.5 dBm	-7.8 dBm

Noise Figure (typical)	3.5 dB nominal
Isolation	uplink/downlink more than 50 dB
Power Requirements	12 V, 2 A (subject to uplink power)

Notes:
1. Nominal gain is the maximum gain at any frequency in the passband.
2. Nominal bandwidth is the difference between two frequencies that are adjacent to the passband where the amplification is 20 dB lower than the passband amplification. One of the frequencies is lower than the passband and the other is higher.
3. The Manufacturer's rated output power of this equipment is for single carrier operation. For situations when multiple carrier signals are present, the rating would have to be reduced by 3.5 dB, especially where the output signal is re-radiated and can cause interference to adjacent band users. This power reduction is to be by means of input power or gain reduction and not by an attenuator at the output of the device.
4. The maximum power for 2 or more simultaneous signals will be reduced by 6 dB every time the number of signals is doubled.

Signal Booster Specifications- Not for use in U.S. or Canada

Model Number	811510 / 14	811710 / 14	811910 / 14
Frequency	880-960 MHz	880-960 MHz / 1710-1880 MHz	880-960 MHz / 1920-2170 MHz
Gain (up/down)	25 dB / 25 dB		
Max RF	+ 34 dBm / + 32 dBm		
Noise Figure	3.5 dB nominal		
Flatness (up/down)	± 2 dB / ± 2 dB		
Isolation	> 50 dB		
Power Requirements	12 V, 2 A (subject to uplink power)		
Connectors	FME-Male 50 ohms		
Dimensions	5 x 3.5 x 1.2 (inch) / 12.7 x 8.9 x 3 (cm)		
Weight	1.03 lbs / 0.468 kg		

Wilson® Electronics, Inc.